MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2019 / 2020

TSE 3571 – SOFTWARE EVOLUTION AND MAINTENANCE

(All sections / Groups)

21 OCTOBER 2019
2:30 P.M. – 4:30 P.M.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of 4 pages (including cover page) with 6 Questions only.
2. Attempt **ANY FIVE** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

Question 1 (10 marks)

a) State ANY THREE of Lehman's laws of software evolution. Explain the reasons behind these laws.

[5 Marks]

b) Discuss what would happen if a software system which is used in a real-world environment is not changed at all.

[2 Marks]

c) Briefly describe the Iterative Model of software evolution. Illustrate your answer with a diagram.

[3 marks]

Question 2 (10 marks)

a) Describe ANY TWO of the following categories of factors that have influence on software maintenance activities.
- The product to be maintained
- The types of maintenance performed
- The maintenance organization processes to be followed
- The people in the maintenance organization and the customer/client organization

[6 marks]

b) State ONE advantage and ONE disadvantage of having the software maintenance team formed separately instead of assigning the development team to continue maintaining their programs.

[4 marks]

Continued...

Question 3 (10 marks)

a) Briefly describe the following software maintenance tools:
- Static Analyzer
- Data Flow Analyzer

[6 marks]

b) Describe how a Simulator can be used in software maintenance activities.

[4 marks]

Question 4 (10 marks)

You have just been employed as a software engineer at a local software company. After a week of induction activities, you are assigned to maintain a Web-based application that processes customer orders. The developer of the application will be leaving in a week, and you are only given the source codes of the application.

a) Describe ANY ONE strategy you can use to understand the application.

[4 marks]

b) Explain the activities to be done to produce higher level documentation of the application using the given source codes.

[6 marks]

Continued...

Question 5 (10 marks)

a) Based on your group assignment, describe how the different changes to the software application is controlled so that the quality of the software is maintained.

[6 marks]

b) Explain the importance of Status Accounting and Auditing in software configuration management.

[4 marks]

Question 6 (10 marks)

MyInsurance Sdn Bhd is an insurance company that has been in business for many decades. For many years, the company used a mainframe system with applications to support many of its business processes. The top management of this company has decided to deploy a Web portal and mobile application for its customers within the next 2 years.

a) Describe how a database wrapper can be used in the new system to provide access to the existing database. Illustrate your answer with a diagram.

[4 marks]

b) Describe ANY TWO migration methods to migrate the current system to the new system.

[6 marks]

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